

SEQUENCE LISTING

<110> Varner, Judith

<120> Methods for Altering Hematopoietic Progenitor Cell Adhesion, Differentiation, and Migration

<130> UCSD-10834

<160> 97

<170> PatentIn version 3.2

<210> 1

<211> 1032

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<213> Homo sapiens

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Asn Thr Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn
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Arg Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala Asn Ala
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Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn
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Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu
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Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly
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Val Thr Leu Ser Arg Gln Pro Gly Glu Asn Gly Ser Ile Val Thr Cys
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Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu
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Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu

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Ser Lys Arg Ile Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly
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Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys
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Asp Leu Ile Val Met Gly Ala Pro Gly Ser Ser Tyr Trp Thr Gly Ser
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Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys Ala Phe Leu Asp
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Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly Tyr Ser Val Gly
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Ala Gly His Phe Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala
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Pro Gln His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser Ile Asp Glu
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Lys Glu Leu Asn Ile Leu His Glu Met Lys Gly Lys Lys Leu Gly Ser
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Tyr Phe Gly Ala Ser Val Cys Ala Val Asp Leu Asn Ala Asp Gly Phe
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Gly Arg Val Phe Val Tyr Ile Asn Ser Gly Ser Gly Ala Val Met Asn
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Ala Met Glu Thr Asn Leu Val Gly Ser Asp Lys Tyr Ala Ala Arg Phe
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Tyr Ile Tyr Asn Gly Arg Ala Asp Gly Ile Ser Ser Thr Phe Ser Gln
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Arg Ile Glu Gly Leu Gln Ile Ser Lys Ser Leu Ser Met Phe Gly Gln
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Ser Ile Ser Gly Gln Ile Asp Ala Asp Asn Asn Gly Tyr Val Asp Val
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Pro Val Val Ile Val Asp Ala Ser Leu Ser His Pro Glu Ser Val Asn
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485 490 495

Asp Leu Thr Leu Cys Phe Ser Tyr Lys Gly Lys Glu Val Pro Gly Tyr
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Ile Val Leu Phe Tyr Asn Met Ser Leu Asp Val Asn Arg Lys Ala Glu
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Ser Pro Pro Arg Phe Tyr Phe Ser Ser Asn Gly Thr Ser Asp Val Ile
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Ile Glu Ala Ala Tyr His Leu Gly Pro His Val Ile Ser Lys Arg Ser
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595 600 605

Lys Asp Ile Met Lys Lys Thr Ile Asn Phe Ala Arg Phe Cys Ala His
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Glu Asn Cys Ser Ala Asp Leu Gln Val Ser Ala Lys Ile Gly Phe Leu
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Gly Val Val Gln Leu Asp Cys Ser Ile Gly Tyr Ile Tyr Val Asp His
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Pro Leu Lys Tyr Glu Val Lys Leu Thr Val His Gly Phe Val Asn Pro
770 775 780

Thr Ser Phe Val Tyr Gly Ser Asn Asp Glu Asn Glu Pro Glu Thr Cys
785 790 795 800

Met Val Glu Lys Met Asn Leu Thr Phe His Val Ile Asn Thr Gly Asn
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Ser Met Ala Pro Asn Val Ser Val Glu Ile Met Val Pro Asn Ser Phe
820 825 830

Ser Pro Gln Thr Asp Lys Leu Phe Asn Ile Leu Asp Val Gln Thr Thr
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865 870 875 880

Ser Lys Thr Asp Lys Arg Leu Leu Tyr Cys Ile Lys Ala Asp Pro His
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Cys Leu Asn Phe Leu Cys Asn Phe Gly Lys Met Glu Ser Gly Lys Glu
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Asp Glu Thr Ser Ala Leu Lys Phe Glu Ile Arg Ala Thr Gly Phe Pro
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His Val Leu Leu Glu Gly Leu His His Gln Arg Pro Lys Arg Tyr Phe
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 <213> Homo sapiens

<400> 2

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Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
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Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
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Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
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Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr
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Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile His
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Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
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Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
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Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
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Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
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Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
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Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
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Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
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Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
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Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
385 390 395 400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
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Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
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Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
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675 680 685

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690 695 700

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
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725 730 735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
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Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
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Thr Thr Gly Cys Glu Ser Pro Phe Phe Ser Trp Arg Thr Gln Ile Asp
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Ser Pro Leu Asn Gly Lys Val Thr Asn Glu Gly Thr Thr Ser Thr Leu
65 70 75 80

Thr Met Asn Pro Val Ser Phe Gly Asn Glu His Ser Tyr Leu Cys Thr
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Ala Thr Cys Glu Ser Arg Lys Leu Glu Lys Gly Ile Gln Val Glu Ile
100 105 110

Tyr Ser Phe Pro Lys Asp Pro Glu Ile His Leu Ser Gly Pro Leu Glu
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Ala Gly Lys Pro Ile Thr Val Lys Cys Ser Val Ala Asp Val Tyr Pro
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Phe Asp Arg Leu Glu Ile Asp Leu Leu Lys Gly Asp His Leu Met Lys
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Ser Gln Glu Phe Leu Glu Asp Ala Asp Arg Lys Ser Leu Glu Thr Lys
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Ser Leu Glu Val Thr Phe Thr Pro Val Ile Glu Asp Ile Gly Lys Val
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Thr Val Arg Gln Ala Val Lys Glu Leu Gln Val Tyr Ile Ser Pro Lys
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Asn Thr Val Ile Ser Val Asn Pro Ser Thr Lys Leu Gln Glu Gly Gly
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Ser Val Thr Met Thr Cys Ser Ser Glu Gly Leu Pro Ala Pro Glu Ile
245 250 255

Phe Trp Ser Lys Lys Leu Asp Asn Gly Asn Leu Gln His Leu Ser Gly
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Asn Ala Thr Leu Thr Leu Ile Ala Met Arg Met Glu Asp Ser Gly Ile
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Tyr Val Cys Glu Gly Val Asn Leu Ile Gly Lys Asn Arg Lys Glu Val
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Glu Leu Ile Val Gln Glu Lys Pro Phe Thr Val Glu Ile Ser Pro Gly
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Pro Arg Ile Ala Ala Gln Ile Gly Asp Ser Val Met Leu Thr Cys Ser
325 330 335

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340 345 350

Ser Pro Leu Ser Gly Lys Val Arg Ser Glu Gly Thr Asn Ser Thr Leu
355 360 365

Thr Leu Ser Pro Val Ser Phe Glu Asn Glu His Ser Tyr Leu Cys Thr
370 375 380

Val Thr Cys Gly His Lys Lys Leu Glu Lys Gly Ile Gln Val Glu Leu
385 390 395 400

Tyr Ser Phe Pro Arg Asp Pro Glu Ile Glu Met Ser Gly Gly Leu Val
405 410 415

Asn Gly Ser Ser Val Thr Val Ser Cys Lys Val Pro Ser Val Tyr Pro
420 425 430

Leu Asp Arg Leu Glu Ile Glu Leu Leu Lys Gly Glu Thr Ile Leu Glu
435 440 445

Asn Ile Glu Phe Leu Glu Asp Thr Asp Met Lys Ser Leu Glu Asn Lys
450 455 460

Ser Leu Glu Met Thr Phe Ile Pro Thr Ile Glu Asp Thr Gly Lys Ala
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Leu Val Cys Gln Ala Lys Leu His Ile Asp Asp Met Glu Phe Glu Pro
485 490 495

Lys Gln Arg Gln Ser Thr Gln Thr Leu Tyr Val Asn Val Ala Pro Arg
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Asp Thr Thr Val Leu Val Ser Pro Ser Ser Ile Leu Glu Glu Gly Ser
515 520 525

Ser Val Asn Met Thr Cys Leu Ser Gln Gly Phe Pro Ala Pro Lys Ile
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Asn Ala Thr Leu Thr Leu Ile Ser Thr Lys Met Glu Asp Ser Gly Val
565 570 575

Tyr Leu Cys Glu Gly Ile Asn Gln Ala Gly Arg Ser Arg Lys Glu Val
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Glu Leu Ile Ile Gln Val Thr Pro Lys Asp Ile Lys Leu Thr Ala Phe
595 600 605

Pro Ser Glu Ser Val Lys Glu Gly Asp Thr Val Ile Ile Ser Cys Thr
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Cys Gly Asn Val Pro Glu Thr Trp Ile Ile Leu Lys Lys Lys Ala Glu
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Lys Ala Gln Leu Lys Asp Ala Gly Val Tyr Glu Cys Glu Ser Lys Asn
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Lys Val Gly Ser Gln Leu Arg Ser Leu Thr Leu Asp Val Gln Gly Arg
675 680 685

Glu Asn Asn Lys Asp Tyr Phe Ser Pro Glu Leu Leu Val Leu Tyr Phe
690 695 700

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Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
50 55 60

Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly
65 70 75 80

Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
85 90 95

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
100 105 110

Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
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Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
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Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
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Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu
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Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
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Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
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Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
210 215 220 240

Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
225 230 235 240

Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu
245 250 255

Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
260 265 270

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
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Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
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Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met
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Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu
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Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser Phe
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Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn
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Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr
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Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala
450 455 460

Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile
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Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg Cys
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Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn
515 520 525

Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys Thr
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Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln
545 550 555 560

Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp
565 570 575

Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg
580 585 590

Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser
595 600 605

Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn
610 615 620

Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys
625 630 635 640

Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg Trp Lys Glu
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Ala Thr Ile Pro Gly His Leu Asn Ser Tyr Thr Ile Lys Gly Leu Lys
660 665 670

Pro Gly Val Val Tyr Glu Gly Gln Leu Ile Ser Ile Gln Gln Tyr Gly
675 680 685

His Gln Glu Val Thr Arg Phe Asp Phe Thr Thr Thr Ser Thr Ser Thr
690 695 700

Pro Val Thr Ser Asn Thr Val Thr Gly Glu Thr Thr Pro Phe Ser Pro
705 710 715 720

Leu Val Ala Thr Ser Glu Ser Val Thr Glu Ile Thr Ala Ser Ser Phe
725 730 735

Val Val Ser Trp Val Ser Ala Ser Asp Thr Val Ser Gly Phe Arg Val
740 745 750

Glu Tyr Glu Leu Ser Glu Glu Gly Asp Glu Pro Gln Tyr Leu Asp Leu
755 760 765

Pro Ser Thr Ala Thr Ser Val Asn Ile Pro Asp Leu Leu Pro Gly Arg
770 775 780

Lys Tyr Ile Val Asn Val Tyr Gln Ile Ser Glu Asp Gly Glu Gln Ser
785 790 795 800

Leu Ile Leu Ser Thr Ser Gln Thr Thr Ala Pro Asp Ala Pro Pro Asp
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Pro Thr Val Asp Gln Val Asp Asp Thr Ser Ile Val Val Arg Trp Ser
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Arg Pro Gln Ala Pro Ile Thr Gly Tyr Arg Ile Val Tyr Ser Pro Ser
835 840 845

Val Glu Gly Ser Ser Thr Glu Leu Asn Leu Pro Glu Thr Ala Asn Ser
850 855 860

Val Thr Leu Ser Asp Leu Gln Pro Gly Val Gln Tyr Asn Ile Thr Ile
865 870 875 880

Tyr Ala Val Glu Glu Asn Gln Glu Ser Thr Pro Val Val Ile Gln Gln
885 890 895

Glu Thr Thr Gly Thr Pro Arg Ser Asp Thr Val Pro Ser Pro Arg Asp
900 905 910

Leu Gln Phe Val Glu Val Thr Asp Val Lys Val Thr Ile Met Trp Thr
915 920 925

Pro Pro Glu Ser Ala Val Thr Gly Tyr Arg Val Asp Val Ile Pro Val
930 935 940

Asn Leu Pro Gly Glu His Gly Gln Arg Leu Pro Ile Ser Arg Asn Thr
945 950 955 960

Phe Ala Glu Val Thr Gly Leu Ser Pro Gly Val Thr Tyr Tyr Phe Lys
965 970 975

Val Phe Ala Val Ser His Gly Arg Glu Ser Lys Pro Leu Thr Ala Gln
980 985 990

Gln Thr Thr Lys Leu Asp Ala Pro Thr Asn Leu Gln Phe Val Asn Glu
995 1000 1005

Thr Asp Ser Thr Val Leu Val Arg Trp Thr Pro Pro Arg Ala Gln
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Thr Leu Gln Pro Gly Ser Ser Ile Pro Pro Tyr Asn Thr Glu Val
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Thr Glu Thr Thr Ile Val Ile Thr Trp Thr Pro Ala Pro Arg Ile
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Gly Phe Lys Leu Gly Val Arg Pro Ser Gln Gly Gly Glu Ala Pro
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Thr Pro Gly Val Glu Tyr Val Tyr Thr Ile Gln Val Leu Arg Asp
1145 1150 1155

Gly Gln Glu Arg Asp Ala Pro Ile Val Asn Lys Val Val Thr Pro
1160 1165 1170

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Ala Phe Thr Asp Val Asp Val Asp Ser Ile Lys Ile Ala Trp Glu
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Ser Pro Gln Gly Gln Val Ser Arg Tyr Arg Val Thr Tyr Ser Ser
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Pro Ser Thr Val Gln Lys Thr Pro Phe Val Thr His Pro Gly Tyr
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35 40 45

Lys Lys Phe Gly Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser
50 55 60

Phe Tyr Thr Lys Asp Leu Ile Val Met Gly Ala Pro Gly Ser Ser Tyr
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Trp Thr Gly Ser Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys
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Ala Phe Leu Asp Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly
100 105 110

Tyr Ser Val Gly Ala Gly His Phe Arg Ser Gln His Thr Thr Glu Val
115 120 125

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Thr Gly Asn Gly Ile Gln Leu Pro Gly Thr Ser Gly Gln Gln Pro Ser
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<400> 34

Tyr Cys Ala Pro Cys
1 5

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<400> 35

Tyr Cys Asp Pro Cys
1 5

<210> 36
<211> 4
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<400> 36

Cys Asp Phe Cys
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<210> 37
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Arg Cys Asp Pro Cys
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<223> ThioP

<400> 38

Arg Cys Asp Pro Cys
1 5

<210> 39
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<213> Homo sapiens

<400> 39

Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
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<210> 40
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<223> Xaa can be any naturally occurring amino acid

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Xaa Cys Asp Pro Cys
1 5

<210> 41
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<400> 41

Cys Gly Arg Gly Asp Ser Pro Cys
1 5

<210> 42
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<213> Homo sapiens

<400> 42

Asn Ser Val His Pro Cys Cys Asp Pro Val Thr Cys Glu Pro Arg Glu
1 5 10 15

Gly Glu His Cys Ile Ser Gly Pro Cys Cys Arg Asn Cys Lys Phe Leu
20 25 30

Asn Ala Gly Thr Ile Cys Lys Arg Ala Met Leu Asp Gly Leu Asn Asp
35 40 45

Tyr Cys Thr Gly Lys Ser Ser Asp Cys Pro Arg Asn Arg Tyr Lys Gly
50 55 60

Lys Glu Asp
65

<210> 43
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<400> 43

Met Leu Asp Gly
1

<210> 44
<211> 9
<212> PRT
<213> Homo sapiens

<400> 44

Arg Thr Gln Ile Asp Ser Pro Leu Asn
1 5

<210> 45
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<213> Homo sapiens

<400> 45

Thr Gln Ile Asp Ser Pro
1 5

<210> 46
<211> 4
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<213> Homo sapiens

<400> 46

Gln Ile Asp Ser
1

<210> 47
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<212> PRT
<213> Homo sapiens

<400> 47

Ile Asp Ser Pro
1

<210> 48
<211> 4
<212> PRT
<213> Homo sapiens

<400> 48

Lys Leu Glu Lys
1

<210> 49
<211> 8
<212> PRT
<213> Homo sapiens

<400> 49

Gly Pro Glu Tyr Leu Asp Val Pro
1 5

<210> 50
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<400> 50

Leu Asp Val Pro
1

<210> 51
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<212> PRT
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<400> 51

Ile Leu Asp Val
1

<210> 52

<400> 52
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<210> 53

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<210> 54
<211> 52
<212> PRT
<213> Homo sapiens

<400> 54

Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His Asn
1 5 10 15

Thr Ile Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn Arg
20 25 30

Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala Asn Ala Ser
35 40 45

Val Ile Asn Pro
50

<210> 55

<211> 60

<212> PRT

<213> Homo sapiens

<400> 55

Gly Arg Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly
1 5 10 15

Pro His Asn Thr Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly
20 25 30

Ala Asn Arg Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala
35 40 45

Asn Ala Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg
50 55 60

<210> 56

<211> 74

<212> PRT

<213> Homo sapiens

<400> 56

Gly Val Pro Thr Gly Arg Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu
1 5 10 15

Leu Tyr Gln Gly Pro His Asn Thr Leu Phe Gly Tyr Ser Val Val Leu
20 25 30

His Ser His Gly Ala Asn Arg Trp Leu Leu Val Gly Ala Pro Thr Ala
35 40 45

Asn Trp Leu Ala Asn Ala Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg
50 55 60

Cys Arg Ile Gly Lys Asn Pro Gly Gln Thr
65 70

<210> 57
<211> 27
<212> PRT
<213> Homo sapiens

<400> 57

Ile Val Thr Cys Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn
1 5 10 15

Glu Asn Lys Leu Pro Thr Gly Gly Cys Tyr Gly
20 25

<210> 58
<211> 34
<212> PRT
<213> Homo sapiens

<400> 58

Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu
1 5 10 15

Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu
20 25 30

Ser Lys

<210> 59
<211> 17
<212> PRT
<213> Homo sapiens

<400> 59

Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly Glu Asn Phe Ala
1 5 10 15

Ser

<210> 60
<211> 28
<212> PRT
<213> Homo sapiens

<400> 60

Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly Glu Asn Phe Ala Ser Cys
1 5 10 15

Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys Asp Leu
20 25

<210> 61
<211> 14
<212> PRT
<213> Homo sapiens

<400> 61

Gly Ser Ser Tyr Trp Thr Gly Ser Leu Phe Val Tyr Asn Ile
1 5 10

<210> 62
<211> 20
<212> PRT
<213> Homo sapiens

<400> 62

Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala Pro Gln His Glu
1 5 10 15

Gln Ile Gly Lys
20

<210> 63
<211> 22
<212> PRT
<213> Homo sapiens

<400> 63

Gly Gly Ala Pro Gln His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser
1 5 10 15

Ile Asp Glu Lys Glu Leu
20

<210> 64
<211> 12
<212> PRT
<213> Homo sapiens

<400> 64

Gly Gly Ala Pro Gln His Glu Gln Ile Gly Lys Ala
1 5 10

<210> 65
<211> 12
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<400> 65

Trp Arg Thr Gln Ile Asp Ser Pro Leu Asn Gly Lys
1 5 10

<210> 66
<211> 14
<212> PRT
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<400> 66

Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Asn Gly Lys Val
1 5 10

<210> 67
<211> 15
<212> PRT
<213> Homo sapiens

<400> 67

Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Asn Gly Lys Val Thr
1 5 10 15

<210> 68
<211> 20
<212> PRT
<213> Homo sapiens

<400> 68

Pro Phe Phe Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Asn Gly Lys
1 5 10 15

Val Thr Asn Glu
20

<210> 69
<211> 8
<212> PRT
<213> Homo sapiens

<400> 69

Ser Arg Lys Leu Glu Lys Gly Ile
1 5

<210> 70
<211> 12
<212> PRT
<213> Homo sapiens

<400> 70

Cys Glu Ser Arg Lys Leu Glu Lys Gly Ile Gln Val
1 5 10

<210> 71
<211> 16
<212> PRT
<213> Homo sapiens

<400> 71

Ala Thr Cys Glu Ser Arg Lys Leu Glu Lys Gly Ile Gln Val Glu Ile
1 5 10 15

<210> 72
<211> 27
<212> PRT
<213> Homo sapiens

<400> 72

Leu Cys Thr Ala Thr Cys Glu Ser Arg Lys Leu Glu Lys Gly Ile Gln
1 5 10 15

Val Glu Ile Tyr Ser Phe Pro Lys Asp Pro Glu
20 25

<210> 73
<211> 13
<212> PRT
<213> Homo sapiens

<400> 73

Gly His Lys Lys Leu Glu Lys Gly Ile Gln Val Glu Leu
1 5 10

<210> 74
<211> 12
<212> PRT
<213> Homo sapiens

<400> 74

Val Thr Cys Gly His Lys Lys Leu Glu Lys Gly Ile
1 5 10

<210> 75
<211> 23
<212> PRT
<213> Homo sapiens

<400> 75

Thr Cys Gly His Lys Lys Leu Glu Lys Gly Ile Gln Val Glu Leu Tyr
1 5 10 15

Ser Phe Pro Arg Asp Pro Glu
20

<210> 76
<211> 24
<212> PRT
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<400> 76

Pro Val Ser Phe Glu Asn Glu His Ser Tyr Leu Cys Thr Val Thr Cys
1 5 10 15

Gly His Lys Lys Leu Glu Lys Gly
20

<210> 77
<211> 11
<212> PRT
<213> Homo sapiens

<400> 77

Arg Thr Gln Ile Asp Ser Pro Leu Ser Gly Lys
1 5 10

<210> 78
<211> 16
<212> PRT
<213> Homo sapiens

<400> 78

Phe Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Ser Gly Lys Val Arg
1 5 10 15

<210> 79
<211> 18
<212> PRT
<213> Homo sapiens

<400> 79

Glu Ser Pro Ser Phe Trp Trp Arg Thr Gln Ile Asp Ser Pro Leu Ser
1 5 10 15

Gly Lys

<210> 80
<211> 13
<212> PRT
<213> Homo sapiens

<400> 80

Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Asp Ala Ser
1 5 10

<210> 81
<211> 16
<212> PRT
<213> Homo sapiens

<400> 81

Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr Pro
1 5 10 15

<210> 82
<211> 17
<212> PRT
<213> Homo sapiens

<400> 82

Arg Ser Ser Pro Val Val Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro
1 5 10 15

Ser

<210> 83
<211> 19
<212> PRT
<213> Homo sapiens

<400> 83

Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser
1 5 10 15

Leu Leu Val

<210> 84

<211> 36

<212> PRT

<213> Homo sapiens

<400> 84

Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser
1 5 10 15

Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile
20 25 30

Ile Lys Tyr Glu
35

<210> 85

<211> 7

<212> PRT

<213> Homo sapiens

<400> 85

Ile Asp Asp Val Pro Ser Thr
1 5

<210> 86

<211> 16

<212> PRT

<213> Homo sapiens

<400> 86

Asn Leu His Gly Pro Glu Ile Leu Asp Val Pro Ser Thr Val Gln Lys
1 5 10 15

<210> 87

<211> 13

<212> PRT

<213> Homo sapiens

<400> 87

Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp Val
1 5 10

<210> 88
<211> 20
<212> PRT
<213> Homo sapiens

<400> 88

Ile Leu Asp Val Pro Ser Thr Val Gln Lys Thr Pro Phe Val Thr His
1 5 10 15

Pro Gly Tyr Asp
20

<210> 89
<211> 17
<212> PRT
<213> Homo sapiens

<400> 89

Val Thr Leu Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp Val
1 5 10 15

Pro

<210> 90
<211> 5
<212> PRT
<213> Homo sapiens

<400> 90

Glu Ile Leu Asp Val
1 5

<210> 91
<211> 8
<212> PRT
<213> Homo sapiens

<400> 91

Ile Pro Arg Glu Asp Val Asp Tyr
1 5

<210> 92
<211> 9
<212> PRT
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<400> 92

Gly His Ile Pro Arg Asp Asp Val Asp
1 5

<210> 93
<211> 8
<212> PRT
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<400> 93

Gly His Ile Pro Arg Glu Asp Val
1 5

<210> 94
<211> 84
<212> PRT
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<400> 94

Leu Asp Val Pro Ser Thr Val Gln Lys Thr Pro Phe Val Thr His Pro
1 5 10 15

Gly Tyr Asp Thr Gly Asn Gly Ile Gln Leu Pro Gly Thr Ser Gly Gln
20 25 30

Gln Pro Ser Val Gly Gln Gln Met Ile Phe Glu Glu His Gly Phe Arg
35 40 45

Arg Thr Thr Pro Pro Thr Thr Ala Thr Pro Ile Arg His Arg Pro Arg
50 55 60

Pro Tyr Pro Pro Asn Val Gly Glu Glu Ile Gln Ile Gly His Ile Pro
65 70 75 80

Arg Glu Asp Val

<210> 95
<211> 90
<212> PRT
<213> Homo sapiens

<400> 95

Pro Glu Ile Leu Asp Val Pro Ser Thr Val Gln Lys Thr Pro Phe Val
1 5 10 15

Thr His Pro Gly Tyr Asp Thr Gly Asn Gly Ile Gln Leu Pro Gly Thr
20 25 30

Ser Gly Gln Gln Pro Ser Val Gly Gln Gln Met Ile Phe Glu Glu His
35 40 45

Gly	Phe	Arg	Arg	Thr	Thr	Pro	Pro	Thr	Thr	Thr	Ala	Thr	Pro	Ile	Arg
50						55					60				
His	Arg	Pro	Arg	Pro	Tyr	Pro	Pro	Asn	Val	Gly	Glu	Glu	Ile	Gln	Ile
65					70				75				80		
Gly	His	Ile	Pro	Arg	Glu	Asp	Val	Asp	Tyr						
					85			90							
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<212>	PRT														
<213>	Homo sapiens														
<400>	96														
Met	Pro	Gly	Lys	Met	Val	Val	Ile	Leu	Gly	Ala	Ser	Asn	Ile	Leu	Trp
1				5				10					15		
Ile	Met	Phe	Ala	Ala	Ser	Gln	Ala	Phe	Lys	Ile	Glu	Thr	Thr	Pro	Glu
					20				25			30			
Ser	Arg	Tyr	Leu	Ala	Gln	Ile	Gly	Asp	Ser	Val	Ser	Leu	Thr	Cys	Ser
					35			40			45				
Thr	Thr	Gly	Cys	Glu	Ser	Pro	Phe	Phe	Ser	Trp	Arg	Thr	Gln	Ile	Asp
					50			55			60				
Ser	Pro	Leu	Asn	Gly	Lys	Val	Thr	Asn	Glu	Gly	Thr	Thr	Ser	Thr	Leu
					65			70		75		80			
Thr	Met	Asn	Pro	Val	Ser	Phe	Gly	Asn	Glu	His	Ser	Tyr	Leu	Cys	Thr
					85			90			95				
Ala	Thr	Cys	Glu	Ser	Arg	Lys	Leu	Glu	Lys	Gly	Ile	Gln	Val	Glu	Ile
					100			105			110				
Tyr	Ser	Phe	Pro	Lys	Asp	Pro	Glu	Ile	His	Leu	Ser	Gly	Pro	Leu	Glu
					115			120			125				
Ala	Gly	Lys	Pro	Ile	Thr	Val	Lys	Cys	Ser	Val	Ala	Asp	Val	Tyr	Pro
					130			135			140				
Phe	Asp	Arg	Leu	Glu	Ile	Asp	Leu	Leu	Lys	Gly	Asp	His	Leu	Met	Lys
					145			150			155		160		
Ser	Gln	Glu	Phe	Leu	Glu	Asp	Ala	Asp	Arg	Lys	Ser	Leu	Glu	Thr	Lys
					165			170			175				

Ser Leu Glu Val Thr Phe Thr Pro Val Ile Glu Asp Ile Gly Lys Val
180 185 190

Leu Val Cys Arg Ala Lys Leu His Ile Asp Glu Met Asp Ser Val Pro
195 200 205

Thr Val Arg Gln Ala Val Lys Glu Leu Gln Val Tyr Ile Ser Pro Lys
210 215 220

Asn Thr Val Ile Ser Val Asn Pro Ser Thr Lys Leu Gln Glu Gly Gly
225 230 235 240

Ser Val Thr Met Thr Cys Ser Ser Glu Gly Leu Pro Ala Pro Glu Ile
245 250 255

Phe Trp Ser Lys Lys Leu Asp Asn Gly Asn Leu Gln His Leu Ser Gly
260 265 270

Asn Ala Thr Leu Thr Leu Ile Ala Met Arg Met Glu Asp Ser Gly Ile
275 280 285

Tyr Val Cys Glu Gly Val Asn Leu Ile Gly Lys Asn Arg Lys Glu Val
290 295 300

Glu Leu Ile Val Gln Ala Phe Pro Arg Asp Pro Glu Ile Glu Met Ser
305 310 315 320

Gly Gly Leu Val Asn Gly Ser Ser Val Thr Val Ser Cys Lys Val Pro
325 330 335

Ser Val Tyr Pro Leu Asp Arg Leu Glu Ile Glu Leu Leu Lys Gly Glu
340 345 350

Thr Ile Leu Glu Asn Ile Glu Phe Leu Glu Asp Thr Asp Met Lys Ser
355 360 365

Leu Glu Asn Lys Ser Leu Glu Met Thr Phe Ile Pro Thr Ile Glu Asp
370 375 380

Thr Gly Lys Ala Leu Val Cys Gln Ala Lys Leu His Ile Asp Asp Met
385 390 395 400

Glu Phe Glu Pro Lys Gln Arg Gln Ser Thr Gln Thr Leu Tyr Val Asn
405 410 415

Val Ala Pro Arg Asp Thr Thr Val Leu Val Ser Pro Ser Ser Ile Leu
420 425 430

Glu Glu Gly Ser Ser Val Asn Met Thr Cys Leu Ser Gln Gly Phe Pro
435 440 445

Ala Pro Lys Ile Leu Trp Ser Arg Gln Leu Pro Asn Gly Glu Leu Gln
450 455 460

Pro Leu Ser Glu Asn Ala Thr Leu Thr Leu Ile Ser Thr Lys Met Glu
465 470 475 480

Asp Ser Gly Val Tyr Leu Cys Glu Gly Ile Asn Gln Ala Gly Arg Ser
485 490 495

Arg Lys Glu Val Glu Leu Ile Ile Gln Val Thr Pro Lys Asp Ile Lys
500 505 510

Leu Thr Ala Phe Pro Ser Glu Ser Val Lys Glu Gly Asp Thr Val Ile
515 520 525

Ile Ser Cys Thr Cys Gly Asn Val Pro Glu Thr Trp Ile Ile Leu Lys
530 535 540

Lys Lys Ala Glu Thr Gly Asp Thr Val Leu Lys Ser Ile Asp Gly Ala
545 550 555 560

Tyr Thr Ile Arg Lys Ala Gln Leu Lys Asp Ala Gly Val Tyr Glu Cys
565 570 575

Glu Ser Lys Asn Lys Val Gly Ser Gln Leu Arg Ser Leu Thr Leu Asp
580 585 590

Val Gln Gly Arg Glu Asn Asn Lys Asp Tyr Phe Ser Pro Glu Leu Leu
595 600 605

Val Leu Tyr Phe Ala Ser Ser Leu Ile Ile Pro Ala Ile Gly Met Ile
610 615 620

Ile Tyr Phe Ala Arg Lys Ala Asn Met Lys Gly Ser Tyr Ser Leu Val
625 630 635 640

Glu Ala Gln Lys Ser Lys Val
645

<210> 97
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<212> PRT
<213> Homo sapiens

<400> 97

Cys Tyr Tyr Gly Asn Cys
1 5